

1. (Currently Amended) Fuel cell with

a first electrode (3) and a second electrode (4), one of which is formed as the cathode and the other as the anode,

a layer (5) that is permeable at least to protons, with catalytic activity or an additional catalytic material in the region between the first electrode (3) and the second electrode (4),

a fuel delivery device to provide feed-in a fuel ( $H_2$ ), and

a reactant delivery device to provide feed-in a reactant ( $O_2$ ), which reacts with protons from the fuel ( $H_2$ ) to generate current, with the fuel delivery device and the reactant delivery device being positioned on the side of the first electrode and on the side of the second electrode, respectively,

where characterized in that

the fuel ( $H_2$ ) is integrated into the material of one of the electrodes (3) formed as the fuel delivery device (3) and/or of a layer adjacent to it.

2. (Currently Amended) Fuel cell according to Claim 1 in which the fuel delivery device (3)

comprises ~~consists of~~ a contacted material that is treated with the fuel.

3. (Currently Amended) Fuel cell according to Claim 1 ~~or 2~~ in which the fuel delivery device

(3) comprises ~~contains~~ palladium (Pd).

4. (Currently Amended) Fuel cell according to claim 1 ~~a foregoing claim~~ in which hydrogen

( $H_2$ ) is integrated into the fuel delivery device (3) as the fuel.

5. (Currently Amended) Fuel cell according to claim 1 ~~a foregoing claim~~ in which the reactant infeed device for the infeed of the reactant (O<sub>2</sub>) comprises ~~consists of~~ the space surrounding at least the second electrode or the space surrounding the reaction region.

6. (Currently Amended) The fuel cell of claim 1 comprising an Electrical circuit (7; 16), with  
~~a fuel cell (1) that has a fuel delivery device (3) according to one of the foregoing claims.~~

7. (Currently Amended) The fuel cell of claim 6, where the electrical circuit comprises  
~~Electrical circuit according to Claim 6 produced as a CMOS circuit.~~

8. (Currently Amended) The fuel cell of claim 1, comprising: Electrically operated device with  
 a control device (17; 27) for controlling a current flow or an energy infeed, ~~and~~  
~~an integrated source of current,~~  
~~characterized in that~~  
~~the source of current is produced as a fuel cell with a fuel delivery device according to a~~  
~~foregoing claim.~~

9. (Currently Amended) The fuel cell of claim 1, comprising: Fuel cell, circuit, or electrically  
~~operated device according to one of the foregoing claims with~~  
 a control device (17; 27) to activate the electrochemical reaction in the fuel cell (1) or to  
 complete the electrical circuit through the electrodes (3, 4) of the fuel cell (1).

10. (Currently Amended) ~~The F~~fuel cell ~~of, circuit, or electrically operated device according to~~ Claim 9 in which the control device (27) comprises ~~consists of~~ a closed closure device, wherein the space around the reaction region of the reactant ( $O_2$ ) has no reactant and wherein reactant from external space enters the reaction region by opening the closure device (27).

11. (Currently Amended) ~~The F~~fuel cell ~~of claim 1, where, circuit, or electrically operated device according to a foregoing claim, with~~  
 ———at least the fuel cell being designed as a replaceable module.

12. (Currently Amended) ~~The F~~fuel cell ~~of claim 1, comprising, circuit, or electrically operated device according to a foregoing claim, with~~

a fuel sensor (18) that is positioned in the fuel delivery device (3) and/or in the reaction region between the protons and the reactant, to determine the available or current amount of fuel.

13. (Original) Method for manufacturing a fuel cell in which a first electrode (3), a second electrode (4), and a proton-permeable layer (5) with catalytic activity separating them are produced, or in addition to the layer (5) a catalytic material is produced between the electrodes (3, 4),

characterized in that

a fuel delivery device is produced as an integral part of one of the electrodes (3) or as a layer adjacent to it, with the material of the fuel delivery device being treated with fuel during its preparation or thereafter.

14. (Currently Amended) A fuel cell, comprising: especially according to a foregoing claim,  
with

—a first electrode (3) and a second electrode (4), one of which is formed as the cathode and the other as the anode,

—a layer (5) that is permeable at least to protons, with catalytic activity or an additional catalytic material in the region between the first electrode (3) and the second electrode (4),

—a fuel delivery device to provide feed in a fuel ( $H_2$ ), and

—a reactant delivery device to provide feed in a reactant ( $O_2$ ), which reacts with protons from the fuel ( $H_2$ ) to generate current, with the fuel delivery device and the reactant delivery device being positioned on the side of the first electrode and on the side of the second electrode, respectively,

where characterized in that

—the reactant ( $O_2$ ) for generating a given amount of current is integrated into the material of one of the electrodes produced as a reactant delivery device (3) and/or in a layer adjacent to it,

—and the fuel cell is designed so that only reactant from this reactant delivery device can react with the fuel.

15. (Currently Amended) Fuel cell according to Claim 14 in which the reactant delivery device (3) comprises ~~consists of~~ a contacted material that is treated with the reactant.

16. (Currently Amended) Fuel cell according to Claim 14 ~~or 15~~ in which oxygen ( $O_2$ ) is integrated into the reactant delivery device.

17. (Currently Amended) The fuel cell of claim 14 further comprising an CMOS e~~Electrical circuit (7; 16), particularly a CMOS circuit, with a fuel cell (1) that has a reactant delivery device (3) according to one of Claims 14-16.~~

18. (Currently Amended) The fuel cell of claim 17 further comprising: Electrically-operated  
~~device with~~

- a control device (17; 27) for controlling a flow of current or an infeed of energy, ~~and~~
- ~~an integrated source of current,~~

~~characterized in that~~

~~the current source is produced as a fuel cell with a reactant delivery device according to one of Claims 14-17.~~

19. (Currently Amended) The Ffuel cell of claim 17 further comprising, circuit, or electrically  
~~operated device according to one of Claims 14-18 with~~

a control device (17; 27) for activating the electrochemical reaction in the fuel cell (1) or for completing the electrical circuit through the electrodes (3, 4) of the fuel cell (1).

20. (Currently Amended) The Ffuel cell, circuit, or electrically-operated device according to  
Claim 19 in which the control device (27) comprises ~~consists of~~ a closed closure device, wherein the space around the reaction region of the fuel with the reactant (O<sub>2</sub>) has no fuel, and wherein fuel from the external space enters the reaction region by opening the closure device (27).

21. (Currently Amended) The fuel cell of claim 17, ~~circuit, or electrically operated device according to one of Claims 14-20~~, wherein at least the fuel cell is configured ~~designed~~ as a replaceable module.

22. (Currently Amended) The fuel cell of claim 21, comprising:, ~~circuit, or electrically operated device according to one of Claims 14-21~~, with

a reactant sensor (18) that is positioned in the reactant delivery device (3) and/or in the reaction region between the protons and the reactant, to determine the available or current amount of reactant.

23. (Currently Amended) The fuel cell of claim 21, comprising:, ~~circuit, or electrically operated device according to one of Claims 1-12 or 14-22~~, with

a circuit for measuring the resistance of the fuel delivery device or of the reactant delivery device (3), for determining the remaining amount of fuel or of reactant.

24. (Original) Method for manufacturing a fuel cell in which a first electrode (3), a second electrode (4), and a proton-permeable layer (5) with catalytic activity separating them are produced, or in addition to the layer (5) a catalytic material is produced between the electrodes (3, 4),

characterized in that

a reactant delivery device is produced as an integral part of one of the electrodes (3) or as a layer adjacent to it, with the material of the reactant delivery device being treated with reactant during its preparation or thereafter.

25. (Currently Amended)     The fuel cell of claim 21, comprising: ~~Sensor for determining the amount of a fuel or of a reactant in the sensor environment, with~~  
a fuel cell (1<sup>o</sup>), particularly a fuel cell according to a foregoing claim, and  
a measuring device (30) for determining the strength of the current or the voltage generated by the fuel cell as a measured variable parameter for the fuel or reactant (O<sub>2</sub>).